

What is claimed is:

1. A centripetally-motivated microsystem platform comprising:
 - a) a rotatable platform comprising a substrate having a surface comprising one or a multiplicity of microfluidics structures embedded in the surface of the platform, wherein each microfluidics structure comprises:
 - i) a sample input port fluidly connected to
 - ii) a chamber in thermal contact with a temperature control element, and
 - iii) a sample outlet port,

wherein the temperature control element changes or maintains the temperature of a fluid in the chamber at a temperature greater than ambient temperature, and wherein rotation of the platform maintains or changes the temperature of a fluid in a chamber to be substantially equal to ambient temperature.

2. A microsystem platform of claim 1 wherein the temperature control element is a resistive heater.
3. A microsystem platform of claim 1 wherein the temperature control element is a Peltier heater.
4. A microsystem platform of claim 1 further comprising a temperature sensing element in thermal contact with the chamber of the temperature control element or both.
5. A microsystem platform according to claim 4, wherein the temperature sensing element is a thermistor.
6. A microsystem platform of claim 1 wherein the platform further comprises:
 - b) an electric platen comprising a substrate bearing one or a multiplicity of temperature control elements, wherein each of the temperature control elements is electrically connected to at least two electrical leads, and wherein the electrical leads are connected to a power source through a slip ring

wherein the substrate comprising the sample input port, the chamber and the sample outlet port is separate from the platen and wherein each temperature control element is in thermal contact with a chamber in the substrate of the platform.

7. A microsystem platform according to claim 6, wherein the platen substrate is a printed circuit board.

8. A microsystem platform of claim 6 wherein the temperature control element further comprises one or a multiplicity of metal contact plates in thermal contact with a heating element.

9. A microsystem platform of claim 8 wherein at least one metal contact plate is in thermal contact with the chamber.

10. A microsystem platform of claim 8 wherein at least one metal contact plate is in thermal contact with a heat sink.

11. A microsystem platform of claim 8 wherein the metal contact plate is brass.

12. A microsystem platform of claim 1 wherein the temperature of a fluid in the chamber can be changed at a rate sufficient for performing an *in vitro* amplification reaction.

13. A microsystem platform of claim 12 wherein the *in vitro* amplification reaction is polymerase chain reaction.

14. A microsystem platform of claim 1 that is a circular disk.

15. A microsystem platform of claim 1 wherein the sample chamber further comprises a sample input port.